

MIDI MAGAZINE

No. 1, 1990

ATARI'S MUSIC TECHNOLOGY QUARTERLY



ATARI® Stacy™

MIDI MAGAZINE
Atari's Music Technology Quarterly
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Beyond MIDI: Get Ready for the Next Generation from Atari

by Frank Foster

Director of Specialty Markets

Atari (U.S.) Corporation

*The 1990s have arrived and Atari is ready. Last October Atari started shipping the **Portfolio**, a handheld MS-DOS file-compatible computer. Before the year ended over 200,000 units had been sold.*

*In December, Atari shipped the **Lynx**, a color handheld portable video game system. Product shortages limited the distribution to N.Y. and Tokyo where it sold out each day, for prices well above the suggested retail.*

*In January 1990, Atari shipped its first **Stacy** portable computers to music stores in the U.S. A Stacy4, with 4 meg of RAM and a built-in 40 meg hard disk, retails for \$2899.95. This is surprising when you consider the portable Macintosh's \$6000 price tag for a 2 meg RAM-20 meg hard disk configuration.*

*But, then 1990 looks like it will be full of surprises. Even the 1040ST and 520ST are caught up in Atari's plan for world computer domination. The ST is now the **STE** with enhanced graphics and sound. The color palette went from 512 to 4096, with advanced scrolling now standard. Two audio outputs have been added for 8-bit sampled sound playback. (Not good enough for professional music, but great for previewing sample edits or games). The STE has two additional game controller ports. But perhaps, the most important new feature for the music market is the STE's memory upgradeability. Now a 520 or 1040 can be transformed to 2 or 4 meg system by adding plug-in SIMMS (RAM chips).*

BEYOND THE MIDI STANDARD

In mid-1990, Atari plans to release the Atari MIDI-Tasking System. This utility program will allow sequencer-prioritized multi-tasking with up to six programs executing simultaneously. There are accommodations for data-sharing between applications, even in real-time. In addition, MIDI drivers have been standardized for the ST's internal MIDI ports as well as third-party boxes that allow additional MIDI data streams. SMPTE, MTC and MIDI clock timers have also been standardized.

Atari commissioned the project from Intelligent Music, a MIDI software developer that many industry experts feel revolutionized MIDI applications in the

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Atari's Stacy

MIDI—COMPATIBLE PORTABILITY

Imagine... an Atari ST that could follow you anywhere, from the office to the studio to the road. Sleek and lightweight, it would be a completely self-contained system, including screen, memory, floppy drive, hard drive, and all of the ports and slots that Atari MIDI users have come to rely on.

It's now here. The Atari Stacy has already begun shipping to music computer dealers. It's an ST-compatible portable computer, with one to four megabytes of RAM, integrated 3 1/2" disk drive, 40-megabyte hard drive, back-lit LCD display, full-sized keyboard, and an integrated trackball to replace the Atari mouse. A power adapter is included with the system.

Sam Tramiel, president of Atari Corporation, said the Stacy laptop was designed with all types of users in mind. "Professional musicians can use the full-function system in the studio and then take it on the road for concerts or home to finish their work," he said. "Hobbyists can justify buying the Stacy because they can use it as a desktop per-

sonal computer, as well as part of a MIDI configuration."

The Stacy2, with two megabytes of RAM, retails for \$2499. The Stacy4, with four megabytes of RAM, is available for \$2899.

Although Stacy's display is clear and bright, you can still attach any Atari monitor when you're back at home or in the office. The display is readable in any kind of light—even under dim stage light—thanks to its back-lit, supertwist LCD technology. The display provides 640 x 400 high-resolution monochrome.

The Stacy's modern styling and slim black case makes it fit right in with your other MIDI instruments. And Stacy weighs only about 15 pounds.

Stacy can also be rack mounted for studio use. The built-in trackball with mouse functions means that musicians don't have to create additional work space to maneuver an external mouse and cord. Like all Atari ST computers, Stacy comes with built-in MIDI in/out ports, in

addition to printer, modem, floppy drive, hard disk (DMA), and mouse and joystick ports.

The Stacy's hard disk is a completely integrated part of the system, and provides high speed memory access through the DMA channel. Additional hard disks and the Atari SLM804 laser printer can be easily linked to Stacy.

The Atari Stacy is based on the energy-saving CMOS Motorola 68C000 microprocessor, running at 8 MHz. The new Rainbow TOS operating system and GEM graphic interface, are both contained in ROM. Stacy is completely compatible with all of the ST and MEGA software packages. With more than 200 MIDI titles to choose from, musicians can record, edit, and change compositions with their Stacy system anytime, anywhere.

For more information, contact your local music dealer, or Atari Corporation, 1196 Borregas Avenue, Sunnyvale, CA 94086, (408) 745-2000.

Atari's Intelligent MIDI Controller:

by Mihai Manoliu

The nineties are going to be an exciting time in music. We are riding a new wave of music technology, more powerful and exciting than at any other time in history. From the sounds of sampling to the unification of standards like MIDI and SMPTE, the expansion of technology has made real many undreamed of possibilities for performers, writers, film scorers, producers, teachers, and the mass public.

One of the most promising directions lies in the development of instruments that are a computer/controller hybrid. This is a marriage of a powerful portable computer with a controller designed for optimum musical expression, flexibility, and sensitivity. New sensor technology is employed to eliminate moving parts on the controller, and the computer is used not only for such things as patch changes and MIDI routing and mapping, but also as an intelligent musical partner who remembers perfectly hundreds of scales and chord voicings, and even helps order chord progressions. The machine can be used as a learning tool, and its most amazing aspect is that it doesn't allow the player to play a "wrong" note (out of key, scale, or chord) by shifting the note grid underneath the sensors as the performer plays! Atari has now made this new "super-instrument" available, initially in the high-end professional market, and later (in different forms) to the mass market: yes, one day you will also find a version of it in a department store.

The Hotz Translator, as the instrument is called, is the new machine to watch for: it is likely to set a standard for the best instruments of the nineties. This versatile machine should easily make its way into the major recording studios, new records by Pop stars, and ultimately into large numbers of home studios. Keyboard players will find that the Translator is both more flexible and more expressive than the typical MIDI keyboard (with a range of new techniques unique to the instrument). Everyone will be amazed at the power of the computer interface: special modes can be customized for writing songs, performing, sound effects, teaching, and recording. The Translator can be as simple, or as complex, as the user desires. The phrase "playing your computer" has taken a whole new meaning, since in this instance the computer also plays you.

HARDWARE

What makes the Translator the hot controller for the nineties? First, there are no moving parts (therefore less problems); this also makes for an incredibly fast response. Next, the sensitivity of the sensors is surprisingly broad, and the tiny ridges separating the sensor pads are perfectly

designed: there is enough distinction to clearly separate the notes, yet a player can glide all over the sensors and sound delicate and smooth. Keyboard is not my main instrument, but within hours I was doing things impossible for even the most developed concert pianist! This is due to both the layout of the hardware and the intelligence of the software.



The layout and sensitivity of the Translator make the dexterity of the fingers much less important than with other instruments. This machine is the easiest instrument I have ever played. A sense of time becomes the most critical element—the techniques of playing the "right" notes are easy, fun, and natural. I doubt any true musician can resist such a powerful instrument. For those who distrust the mechanisms of MIDI, it will be hard to argue that the Translator cannot provide as accurate and expressive atonality (especially important for ethnic microtonal music) as most acoustic instruments. The Translator gives even a

The Hotz MIDI Translator

new player more accuracy and expressive power in less time—the only limit is the quality of the sound modules used.

Imagine what all this means for musicians and non-musicians: instead of spending twenty years mastering the technical aspects of the keyboard, a musician can spend one year mastering the Translator and the other nineteen on the nature of music—composition, tone quality, education, and experimentation. Non-musicians can sound great from the first time they play with the magic box. Immediate gratification on an aesthetic level, without the finger-stretching, mind-bending memorization, and long hours of difficult practice. Music can now be much more fun for the young, the old, and even the handicapped.

One of the reasons the Translator is so far beyond regular keyboards is that by using the software interface to shift scales and chords, only the notes necessary for a musical passage are mapped on to the sensors. This leads to 100 percent efficiency, unlike keyboards, where a typical passage may only use 20–30 percent of the keys. If programmed right, the Translator makes available all notes for a particular scale/chord arrangement, and no “out of tune” notes can be accessed. Thus even a new player can play a blinding fast run in a difficult scale without a mistake, something even a great classical pianist may not be able to do with a similar speed. Advanced musicians will have a wonderful time exploring the ethnic, educational, and experimental possibilities now available.

SOFTWARE

The heart of the Translator is its intelligent interface with an Atari ST/Mega computer. The complete Translator package will include a Stacy portable and associated software. It would take a book to do justice to this powerful and dense program, therefore I will limit this discussion to the basic, general principles the software embodies.

The most useful model for understanding the Translator is provided by the principles of MIDI mapping: software designed to provide various levels of MIDI control, including MIDI strings, patch changes, channelization, and note mapping. The Translator is an open-ended package that will continue to grow as users ask for (and discover) new applications.

The software is used to interpret and translate the vast body of MIDI parameters that must be coordinated by a master controller. These continuously shifting parameters for the key, chord progression, scale, and chord voicing, are processed along with other MIDI control data for a par-

ticular performance. In essence, the computer becomes an invisible partner who makes sure that you remember (and can play accurately) every scale, chord, and voicing involved in the piece, and that all your equipment is set correctly for each musical passage. About thirty screens are involved; together they create a very flexible, powerful, and truly intelligent master controller.

TOMORROW'S MUSIC TODAY

Most professional musicians will use the Translator in combination with quality sequencers and notation packages, creating a superb production and composition system that can also be used for education and leading edge musical experimentation. For example, the Translator can be used to learn ethnic scales and microtonal techniques, while it can also be useful in the development of new scales and techniques. To learn about the hundreds of scales the Translator makes available, all one has to do is either bring up the note data on the Translator screen, or print the scales using a notation package. If a student wants to hear the differences between deceptive, plagal, or dominant cadences, he brings up a Bank programmed with these progressions and plays through it. Colleges and even primary schools can certainly use this new approach to support their music programs.

A performer can have each song programmed in, then touch a sensor to call up whichever song he wants. By using a sequencer, he can use patch changes to create a song template, which will send chord/scale change information to the Translator; thus he plays the notes live as the chord/scale information is shifted by the sequencer. There is no noticeable delay as the shifts happen—the right notes are always under his fingers. Obviously, this approach is especially useful when recording in the studio. The producer or performer can save hundreds of hours using this process. The writing of film music, pop songs, or even classical concertos, can be made much more interesting and diverse, simply by making the musical building blocks of both Eastern and Western music available at the touch of a button! This is a truly revolutionary time in music history; world music is becoming a reality.

The Hotz Translator is a visionary instrument, leading us into the music of the twenty-first century. The possibilities inherent in this system are almost infinite; a creative musician can make this his primary instrument and take flight in to a musical world far beyond the limits of any existing instrument. It is easy to play, extremely intelligent, and sensitive. Some dreams are impossible—this dream is real.

ATARI *MIDI*-TASKING



Photo: C-Lab/SoftLink

Atari Computer has launched a multiple application system that will dramatically change the way professional and amateur musicians create and play music. The basis for the system is a two-part utility program called the Atari MIDI-Tasking System.

This versatile system allows Atari ST users to run up to six GEM applications simultaneously. And, with its standardized data-sharing system, information can be exchanged between applications, even in real-time.

The data-sharing system, or "scrapbook," offers a unique set of features specifically for MIDI program users, including the ability to transfer information from any MIDI application to any other MIDI application. With the program's routing, timer, and driver facilities, any MIDI application can address any MIDI hardware device, assuming that a driver has been written for the device.

The MIDI-tasking system's built-in timers can be shared by programs and are the key to multiple realtime sequencing. MIDI applications can be run synchronously—either through an internal timer or from an external timing source. The programs tell the MIDI-tasking system's timers how often and at what resolution periodic tasks should be run. Any MIDI-tasking system-compatible application receives automatic SMPTE and MIDI Time Code (MTC) support, with simultaneous support of 768 ppq, 960 ppq, SMPTE-bit, and millisecond timers.

Atari officials emphasized that the key difference between the

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Beyond MIDI

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field of algorithmic composition with products like Jam Factory, M, and MIDI-Draw. Their involvement in the design of Apple's MIDI Manager was helpful in their effort to create Atari's MIDI-Tasking System.

The capabilities of this new utility make it especially attractive for MIDI power users where studio time is money. However the standardization of inter-application data sharing, with MIDI and SMPTE drivers is expected to have positive long range effects for even the MIDI hobbyist. (See story, page 6).

THE HOTZ REVOLUTION

A good computer and software is a big advantage, but without the ability to perform or enter the music into the computer; MIDI is still limited to people who can play. What about drummers, guitarists, vocalists, filmmakers and others who can hear the music in their head, but have trouble translating it into a MIDI sequencer. For years, Atari watched music producer/inventor Jimmy Hotz build prototype after prototype of a totally new concept in MIDI keyboard control. In 1987, Atari licensed this technology from Jimmy and his partner Mick Fleetwood. (Mick as a drummer had dreamed of such an instrument and enlisted Jimmy to build it.) In February 1990, Atari Corporation began shipping this new MIDI keyboard controller called the **Atari/Hotz MIDI Translator** (or Hotz Box for short). It can be ordered directly from Atari by calling (408) 745-4966. The first units are professional studio and touring systems and retail for \$7,000. Atari plans to announce a consumer version later this year. (See story, page 5).

Why has a computer/video game company like Atari jumped into the musical instrument manufacturing game? Because no one was making anything like the Hotz Box, and Atari felt that there are thousands of people that love music and would like to be more involved in creating music. The traditional instruments are cumbersome and difficult to master. The Hotz technology represents a significant breakthrough in the common man's ability to interface with MIDI music composition.

Next issue: Atari MIDI Alliance; the new Atari TT

Atari MIDI-Tasking

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Atari MIDI-tasking system and systems such as SoftLink, MROS, MPE, and HybridSwitch is that the Atari system uses the ST's built-in GEM kernel to do multi-tasking, giving the user simultaneous access to all programs.

Other systems, called "switchers," can only control or monitor one program at a time and must switch programs via a menu command or a key sequence. Switching is time-consuming, and most MIDI musicians would prefer a multiple application system to a switching system.

The Atari MIDI-tasking system's functions can be used in conjunction with MPE, MROS, and SoftLink, however, because the system's MIDI-tasking capabilities are independent of its GEM capabilities.

The flexibility and versatility of the Atari MIDI-tasking system is also evident in its expanded communication features. Normally, MIDI programs send information to and receive information from the ST's MIDI ports. With MIDI-tasking, in addition to communicating through physical ports, programs can communicate directly with each other through internal pipelines.

Atari recruited Intelligent Music, a respected MIDI developer, to create the MIDI-tasking system. The Atari MIDI-tasking system is based on an unreleased product known as ST-RAM.

Many GEM program can be used with the Atari MIDI-tasking system, assuming the program was written according to Atari's established guidelines. Although the system can work with non-MIDI applications, Atari doesn't plan to promote the MIDI-tasking system outside the music market.

The Atari MIDI-tasking system functions with all Atari MEGA and ST computers. A minimum of one megabyte RAM is recommended. The MIDI-tasking will soon be available through Atari dealers for \$12.95 suggested retail.



Lee's new album made use of SMPTE-Track software from Hybrid Arts™ on an ATARI MEGA 4ST. It was digitally recorded to a Mitsubishi X-850 multitrack and mastered digitally on the X-86HS at a 96 kHz sample rate. The project was co-produced by Lee Ritenour and Don Murray.

